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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,374	11/26/2003	Kook Jin Bae	0111-PA-CON	9667

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EXAMINER	
LEE, RIP A	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/724,374	BAE ET AL.	
	Examiner	Art Unit	
	Rip A. Lee	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *1-4 and 14-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-13 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-22* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-4 and 14 drawn to an aluminum hydroxide composition, classified in class 423, subclass 111.

   II. Claims 5-13 and 22, drawn to a plastic composition, classified in class 524, subclass 437.

   III. Claim 18, drawn to a method of diminishing discoloration, classified in class 524, subclass 567.

   IV. Claims 19-21, drawn to an insulated electrical conductor, classified in class 174, subclass 68.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the plastic composition may have diminished tendency to discolor with use of other additives such as antioxidants or carbon black. The subcombination has separate utility such as a precursor for manufacture of synthetic layered silicates.

3. Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the process for using the product as claimed can be practiced with another materially different product such as an antioxidant package. Furthermore, the product as claimed can be used in a materially different process such as the manufacture of synthetic clays.

4. Inventions I and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). Whereas invention I is drawn to an aluminum hydroxide composition, invention IV is drawn to an insulated electrical conductor. One is used as a discoloration preventative, and the other is used for conducting electricity. Clearly, the two inventions have different functions and different effects.

5. Inventions III and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by a different process which uses melt blending rather than a process using a masterbatch, as presently claimed.

6. Inventions II and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the insulated conductor does not require the presence of more than one covering layer. The subcombination has separate utility such as a composition for making pipe or a synthetic clay.

7. Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, one invention relates to a method of diminishing discoloration of a plastic, and the other invention relates to an electrical conductor. The inventions are unrelated because each has a different function and a different effect.

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

9. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, III, or IV, restriction for examination purposes as indicated is proper.

10. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group III or IV, restriction for examination purposes as indicated is proper.

11. Because these inventions are distinct for the reasons given above and the search required for Group III is not required for Group IV, restriction for examination purposes as indicated is proper.

12. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

13. During a telephone conversation with Michael P. Dilworth on November 30, 2004, a provisional election was made with traverse to prosecute the invention of group I, claims 5-13 and 22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-4 and 14-22 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

14. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 5, 6, 9-13 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,084,013 to Wehner *et al.*

Wehner *et al.* discloses a stabilizer combination comprising least one compound selected from the group consisting of aluminum hydroxides (claim 1). The composition further contains a perchlorate compound (claim 8) and plasticizer (claim 7). The stabilizer is used for making polyvinyl chloride compositions such as PVC pipes and PVC profiles (claim 10). According to the inventors, suitable perchlorates are the alkali metal perchlorates such as $NaClO_4$ (col. 10, lines 20-22) used in an amount of 0.001-5 pw based on 100 parts of PVC resin (col. 10, line 45). Plasticizers include dialkyl phthalates (col. 15, line 12) and trialkyl mellitates (col. 15, line 38). Metal soaps are also incorporated into the composition, and preference is given to calcium, magnesium, and zinc salts of C_{7-18} carboxylic acids (col. 13, lines 25-33 and 49-54). In summary, the subject matter of the present claims is disclosed adequately in Wehner *et al.*

17. Claims 5, 6, 9-13 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,659,764 to Isao *et al.*

Isao *et al.* teaches a composition comprised of polyvinyl chloride, plasticizer, stabilizer, a C_5-C_8 metal carboxylate mixture wherein the metals are Ba and Zn in a 1:2 to 5:1 ratio, and at least one compound selected from the group consisting of magnesium perchlorate, *inter alia*, wherein the amount of magnesium compound is 0.1-5 parts by weight based on 100 parts by weight of polyvinyl chloride (claim 1). Use of a small amount of inorganic compound such as aluminum hydroxide is contemplated (col. 5, lines 48 and 59), and apparently, this is a flame retardant amount since $Al(OH)_3$ has flame retardant properties. The plasticizer is dialkyl phthalate or trialkyl mellitate (col. 6, lines 3-8).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,659,764 to Isao *et al.* in view of U.S. Patent No. 4,464,495 to Brown.

The discussion of the disclosures of the prior art of Isao *et al.* from paragraph 17 of this office action is incorporated here by reference. Although use of a small amount of aluminum hydroxide is contemplated, Isao *et al.* does not disclose what this amount actually comprises. Brown teaches vinyl chloride polymer compositions stabilized with aluminum trihydrate (claim 1). It can be seen in the text that aluminum trihydrate is aluminum hydroxide, $Al(OH)_3$ (col. 4, line 23), and that a small amount of aluminum hydroxide corresponds to about 5-15 parts by weight based on 100 parts of vinyl halide polymer (claims 1 and 5, example 2).

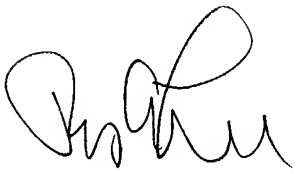
It would have been obvious to one having ordinary skill in the art, having read both references, to arrive at the subject matter of present claims 7 and 8 by using 5-15 parts by weight of aluminum hydroxide in the composition of Isao *et al.* because Brown teaches that this small amount is effective in imparting flame retardancy to the vinyl chloride resin. The combination is obvious because both references relate to stabilization of polyvinyl chloride. The weight ratio prescribed in claim 8 is obvious over the combined teachings: Isao *et al.* prescribes use of 0.1-5 pw of perchlorate and Brown teaches use of 5-15 pw of aluminum hydroxide. As such, the ratio of perchlorate to 100 pw of aluminum hydroxide falls within the claimed range (for example, 0.2 perchlorate ÷ 15 aluminum X 100 = 1.3 perchlorate/aluminum).

Specification

21. The specification is objected to for the following informalities: The specification must include a cross reference to related Application Serial No. 10/035,129, filed January 4, 2002, which is now abandoned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



Rip A. Lee

December 1, 2004